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TI - Method for improving temperature uniformity of a wafer during a rapid thermal annealing  
AB - A method for improving temperature uniformity of a wafer is disclosed, used in an ion implantation annealing and metal silicide annealing process for a semiconductor device. In the present invention, a wafer to be performed a rapid thermal annealing process is provided, the back of which is covered with a dielectric material layer, such as silicon nitride layer or TEOS oxide layer, generated from the former process or other reasons. Thereafter, a heavily doped polysilicon layer is formed on the surface of the wafer (including the front side and the back side of the wafer) and the heavily doped polysilicon layer on the front side of the wafer is removed. By this method, when a rapid thermal annealing is performed, the heavily doped polysilicon layer on the back side of the wafer can provide adequate free carriers for spreading heat rapidly and the temperature uniformity of the wafer surface can be further improved.